

VII. *Observations on the Spinning Limax.* By John Latham, M. D.
F. R. S. and L. S. Romfey.

Read February 7, 1797.

THE account of the *Spinning Limax* seen and well described by Mr. Hoy, in the First Volume of the Transactions of the *Linnean Society*, and observed some years prior thereto by Dr. Shaw, could not fail to strike the notice of every Naturalist as a circumstance unlooked for in this tribe of beings. Amongst others my attentive and observing friend, and Fellow of this Society, Colonel Montagu, has been fortunate in residing this summer at Penryn in Cornwall, where this *Limax* or *slug* was in considerable plenty, by which means he has been enabled to draw up notes of many observations thereon, which he has communicated to me in various letters for the purpose of laying them before the Society.

The result of the Colonel's observations, omitting what Mr. Hoy has before said on the subject, is nearly as follows:—The specimens which he met with were in general from three-fourths of an inch to an inch in length, the general colour a greyish white, and the shield of a yellowish or buff-colour, as may be seen in the coloured drawing thereof. TAB. 8. *fig. 1.* shews the *slug* in a state of repose on a leaf: *fig. 2.* that of progressive motion on the ground: *fig. 3.* a view of the upper surface whilst suspended by its thread from a branch: and *fig. 4.* the same seen from beneath. That it is a custom not unusual for this species of *Limax*, to pass
I
from

from an height securely to the ground, by means of a thread of its own construction, seems manifest; for, on my friend's putting one of them on the projecting frame of a window, it immediately crawled forwards till it came to the projecting angle, from whence, without attempting to fix itself by its fore parts to any thing, it became visibly suspended by a thread from its tail. When it had descended about two feet, the Colonel took it up by the thread, and carried it to a distant room; but, in trying to fix it afresh, in order more accurately to observe its progress, the thread broke. He then put it on a frame about four feet from the ground; in a few minutes it was again suspended, and, observing by his watch, descended at the rate of three inches and an half in a minute. The motion was not perfectly smooth and regular, but at times slight jerks were observed. When the slug was near the ground, an attempt was made, by taking hold of the thread near to the body, to fix it afresh, but the thread again broke, as it did likewise on being tried three other times with the same view, each time the slug having nearly reached the floor. At last he fixed the end to a stick, by which he was enabled, by turning the stick round, to wind up the thread faster than it was produced. The thread however soon broke, and after these trials, although the slug made several attempts to spin, it as often fell to the ground; on which it was put into wet moss, and the next day seemed so far to have recovered the property of spinning, as again to go through the former experiments.

By the above repeated essays, the Colonel, by means of glasses, was enabled to make the fullest observations, and found for certain that the secretion, of which the thread was formed, was wholly from the under parts, and not from the back or sides, both of which appeared nearly dry; nor did it proceed from any orifice in the tail, for in some experiments it was suspended by the tip of the tail, at other times from full an eighth of an inch on one side of it. This

Limax appeared to be sensible of its abilities, for it extended itself from the bottom of the frame, with its head downwards, till the tail became suspended; and it was by means of an undulating motion of the belly, similar to that in the act of crawling, that the flow of the viscous secretion was produced towards the tail; but in doing this the belly was extremely contracted, being furnished with numerous transverse *rugæ*; at the same time the body and *tentacula* were fully extended, indicating no alarm whatever: the head was occasionally moved from side to side, which gave several turns to the right or left as the centre of gravity lay; but as it as frequently turned one way as the other, the thread was not in the least twisted. The thread, on first leaving the tail, conformed to the shape of that part, being flat, and five times as broad as at one eighth of an inch distant therefrom; but afterwards seemed of an equal size, and considerably smaller than the finest human hair. When a portion of this thread was placed under a microscope, it appeared contracted, by its surface being wrinkled; it was pellucid, and seemed elastic.

Colonel Montagu adds, that he has met with numbers of them, some of which could not by any means be induced to spin, as if sensible of their inability so to do, readily turning back when approaching the projecting edge; whilst others at once let themselves down without hesitation; so that it might be known by their motion, when near the brink of the precipice, whether they were endued with the faculty or not.

The above were the principal of the observations communicated to me, the last of which were made the beginning of October. My friend, as well as Mr. Hoy, seems to think that the subject in question is no other than the *Limax agrestis* of Linnæus, to which I most readily assent; and that it is, most probably the variety mentioned by Müller in his *Hist. Verm. II. p. 9. β. viz. Limax albidus clypeo flavescente*; and perhaps also the var. *ε.* in Gmelin's edition of the *Syst.*

Naturæ

Naturæ of Linnæus, p. 3101. *Limax albus clypeo flavescente*. Lister has figured it, not inaccurately, both in his *Animal. Angliæ*, p. 130. tab. 2. f. 16. as well as in his *Synopsis Method. Conch.* as one of his *Cochleæ nudæ terrestres*, see tab. 101. A. : but both figures seem to correspond with the plain sort, in which the shield and body do not differ in colour; for he names it *L. cinereus parvus immaculatus*. However he is silent in respect to the faculty, in this identical species, of spinning a thread, although he has noticed the circumstance in the *Limax cinereus* of Linnæus, which he names *L. cinereus maximus striatus & maculatus*, p. 127. t. 2. f. 15. (the same figured in his *Synopsis*, tab. 101. a. f. d.) and delivers his sentiments, at p. 130, in the following words: “Eisdem Limaces alio tempore circa men-
“sem Junium in sylvis opacis observavi, ex arborum ramis demis-
“sos, singulos singulis funibus bipedalibus crassis & validis satis: at
“e propria saliva confectis. Est sanè magna affinitas inter humo-
“rem illum e quo araneorum erucarumque fila fiunt, atque horum
“animalium salivam.”

In respect to the quantity of glutinous matter sufficient for the purpose of suspension, according to Swammerdam the texture of the whole surface of the body is more or less disposed to furnish it*; but, by the above observations, we find that the glands of the belly and under parts are those which are materially subservient thereto.

* *Bibl. Naturæ*, part 1. ord. 1. cap. 6. where he says, “After what manner the slimy
“humour distils from the glands of the skin, may be seen in this manner: The skin must
“be wiped with spongy blotting paper until none of the slimy humour is seen, or till the
“whole is cleared off; then the skin must be taken between the fingers and pressed
“gently; and if this be done under a microscope, the slimy humour will be seen to come
“out insensibly from the glandular pores of the skin like clear and minute points: these,
“by continuing the pressure, will become small drops; and these, in some time, gather-
“ing together, will form a considerable collection of this matter; so that the whole skin
“will be moistened and become glutinous.” See *Book of Nature*, part 1. p. 54. (*Engl. Transl.*)

From what has been said it should seem no difficult matter to suppose the possibility of *every Species of the Genus Limax* being competent to the forming threads of the like kind; so far from the faculty being confined to one in particular.

The first discovery of the singularity which has given rise to the above essay, like many other things, was owing to fortuitous observation; and, to say the truth, the fact was totally unlooked for, and by many scarcely credited, although so well attested: but knowledge of every kind is slow in its progress. It is to be hoped, therefore, that no opportunity will be hereafter neglected by individuals of forwarding to the Linnean Society their observations without reserve, although such may appear at first trivial, for they may probably lead to more consequential discoveries.

Romsey, Nov. 11, 1796.